



Features

- RoHS compliant*
- CW or CCW rotary switch
- Linear and audio tapers
- PC board and bushing mount
- Splash seal
- Metal bushing and shaft

Applications

- Test and measurement equipment
- Avionics controls
- Communications equipment
- Medical laboratory equipment

56 – Sealed 1/2 " (12.5 mm) Panel Control w/Rotary Switch

Electrical Characteristics¹

Standard Resistance Range

Linear	1K to 500K ohms
Audio	1K to 500K ohms

Total Resistance Tolerance

B & D Tapers	±20 %
E & S Tapers	±10 %

Independent Linearity

Absolute Minimum Resistance	2 ohms maximum
Effective Electrical Angle	240 ° ±5

Contact Resistance Variation

Dielectric Withstanding Voltage (MIL-STD-202, Method 301)	±2 %
Sea Level	1,500 VAC minimum

70,000500 VAC minimum
Insulation Resistance	1,000 megohms minimum

Power Rating At 70 °C (Derate To 0 At 125 °C)

(Voltage Limited By Power Dissipation or 350 VAC, Whichever Is Less)

Linear Tapers.....	0.5 watt
Audio Tapers	0.25 watt

Theoretical Resolution.....	Essentially infinite
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Environmental Characteristics¹

Operating Temperature Range	+1 °C to +125 °C
Storage Temperature Range	-55 °C to +125 °C

Temperature Coefficient Over Storage Temperature Range	±1,000 ppm/°C
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Vibration	8 G
Total Resistance Shift.....	±2 % maximum

Voltage Ratio Shift.....	±5 % maximum
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Shock.....	20 G
Total Resistance Shift.....	±2 % maximum

Voltage Ratio Shift.....	±5 % maximum
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Load Life.....	1,000 hours
Total Resistance Shift.....	±10 % TRS maximum

Rotational Life (No Load).....	50,000 cycles
Total Resistance Shift.....	±10 % TRS maximum

Contact Resistance Variation	±2 %
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Moisture Resistance (MIL-STD-202, Method 103, Condition B)	
B & E Taper	±10 % TRS
D & S Taper	±20 % TRS

IP Rating	
Entire Unit.....	IP64
Shaft/Bushing	IP65

Mechanical Characteristics

Stop Strength.....	56 N-cm (5 lb.-in.)
Mechanical Angle	290 ° ±5 °

Torque	
Running/Starting	0.2 to 1.3 N-cm (0.25 to 2.0 oz.-in.)
Mounting (Torque on Bushing)	1.7 to 2.0 N-m (15 to 18 lb.-in.) maximum

Weight	8.5 grams
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Terminals	PC pin
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Soldering Condition	Recommended hand soldering using Sn95/Ag5 no clean solder, 0.025 " wire diameter.
	Maximum temperature 399 °C (750 °F) for 3 seconds. No wash process to be used with no clean flux.

Part can be wave soldered at 260 °C (500 °F) for 5 seconds, no wash process with no clean flux.

Marking	Manufacturer's trademark, part number, resistance value and date code.
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Ganging (Multiple Section Potentiometers and Switches)	Inquire for availability, minimum order quantity and price.
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Hardware	Locking bushing versions are shipped with one additional locking nut (Bushing A: H-37-2 & H-38-2; Bushing C: H-37-1 & H-38-1)
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¹Electrical specifications tested at 200 RPM, at room ambient: +25 °C nominal.



WARNING

Cancer and Reproductive Harm

www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

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56 – Sealed 1/2 " (12.5 mm) Panel Control w/Rotary Switch

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Initial Electrical Characteristics - Switch

Switch Type	SPDT (Break before make)
Power Rating (Resistive Load)	0.5 A @ 30 VDC
Dielectric Withstanding Voltage (MIL-STD-202, Method 301)	
Sea Level.....	1000 VAC minimum
Insulation Resistance	1000 megohms minimum
Contact Resistance30 milliohms maximum
Contact Bounce5 milliseconds maximum
Actuation Angle.....	35 ° maximum
Switch Travel	25 ° maximum
Detent Torque	1.3 N-cm (2.0 oz.-in) nominal

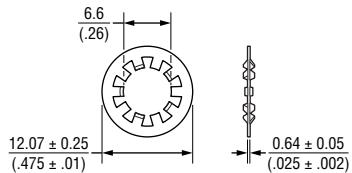
Environmental Characteristics¹

Vibration	8 G
Contact Resistance.....	.30 milliohms maximum
Contact Bounce	0.1 milliseconds maximum
Shock.....	20 G
Contact Resistance.....	.30 milliohms maximum
Contact Bounce	0.1 milliseconds maximum
Rotational Life @ Rated Power	50,000 cycles
Contact Resistance.....	100 milliohms maximum
Moisture Resistance (MIL-STD-202, Method 103, Condition B)	
Contact Resistance.....	.30 milliohms maximum
Insulation Resistance (After 24 Hours @ Room Temperature - 500 VDC).....	100 megohms minimum

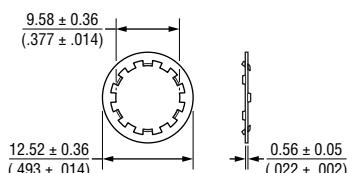
¹Electrical specifications tested at 200 RPM, at room ambient: +25 °C nominal.

Hardware

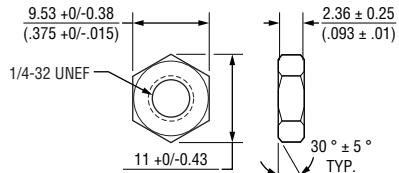
LOCKWASHER H-37-1



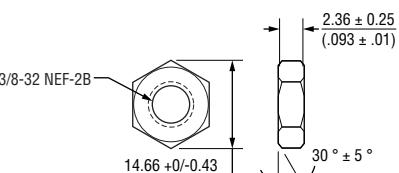
LOCKWASHER H-37-2



NUT H-38-1



NUT H-38-2



DIMENSIONS: MM
(INCHES)

Date Code Description

YYWWM

M = COUNTRY OF MANUFACTURE
(MEXICO)
WW = WEEK NUMBER
YY = LAST TWO DIGITS OF YEAR
MANUFACTURED

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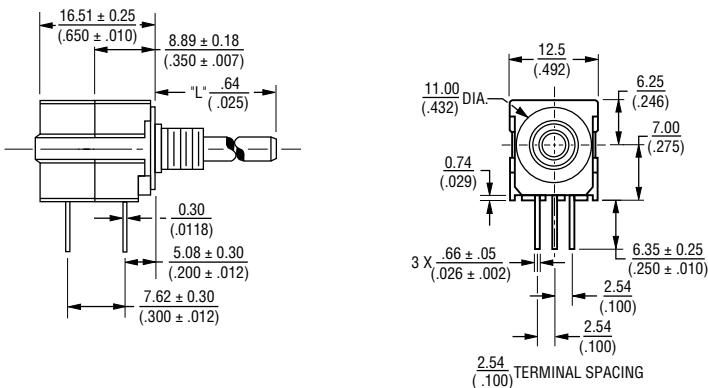
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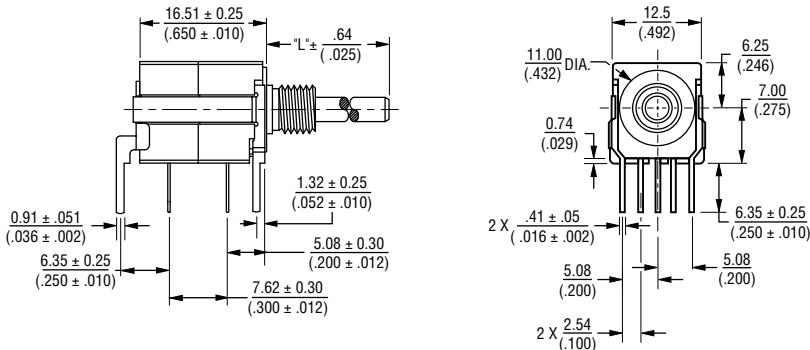
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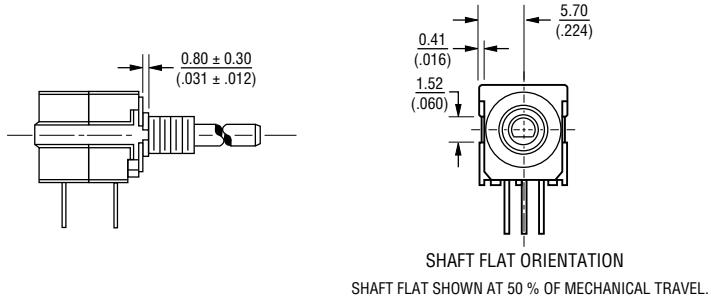
Product Dimensions



PACKAGE DIMENSIONS W/PCB MOUNTING BRACKET



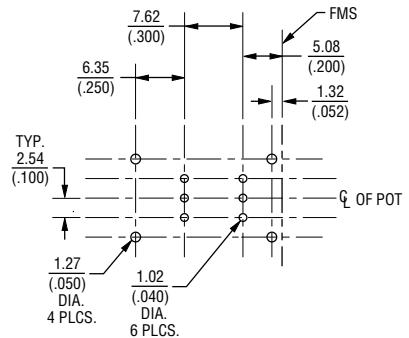
ANTI-ROTATION LUG (Style "A", 90 ° CW Shown)



FOR TOLERANCES SHOWN: .XX = $\pm \frac{.25}{(.010)}$
.XXX = $\pm \frac{.13}{(.005)}$
SHAFT DIMENSIONS $\pm \frac{.80}{(1/32)}$

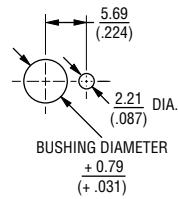
DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Recommended PCB Layout

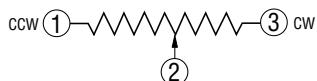


(Double Module Front and Rear Bracket Shown)

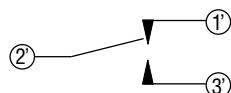
Suggested Panel Layouts



Electrical Schematic

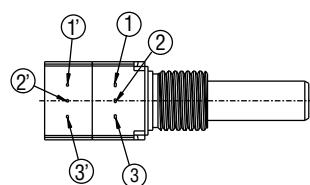


Switch Configuration



SPDT

Terminal Layout



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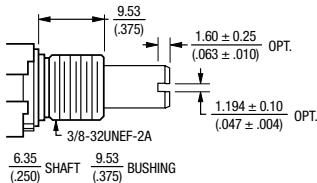
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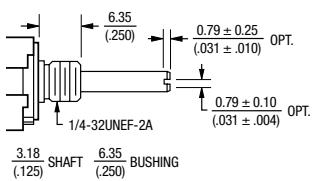
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Shaft/Bushing Styles



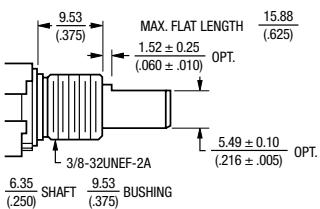
A Style Bushing

STD. LENGTH 'L'
.750 (19.05)
.875 (22.23)



C Style Bushing

STD. LENGTH 'L'
.750 (19.05)
.875 (22.23)

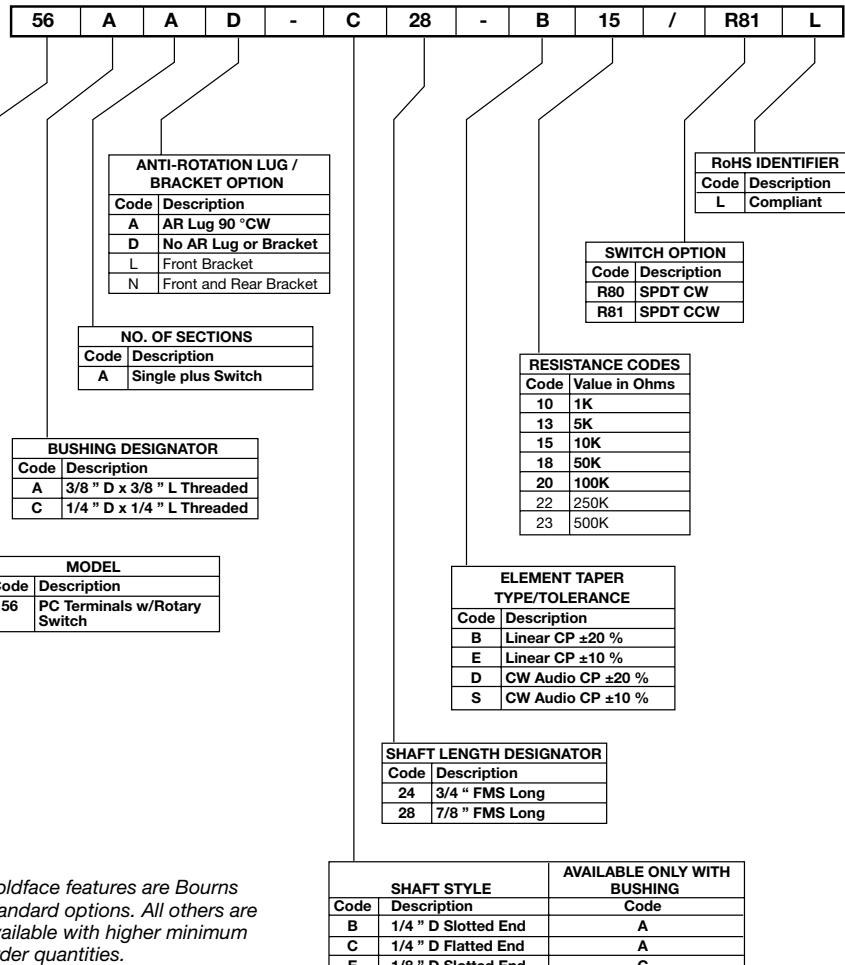


A Style Bushing - Flatted Shaft

STD. LENGTH 'L'
.750 (19.05)
.875 (22.23)

DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

How To Order



Boldface features are Bourns standard options. All others are available with higher minimum order quantities.

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REV. 10/20

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